

## ABSTRACT

An optical system utilizing phosphors to perform mathematical operations without the direct or necessary use of an electronic component or electrical power source is disclosed. The luminouscent and quenching properties of phosphors are combined with at least one first-order relaxation subsystem such that when the optical system achieves equilibrium, it will have performed certain mathematical operations. The precise mathematical operation to be performed is determined by controlling the materials utilized, light inputs, and certain variables within the optical system.